



CMM TECHNICAL WORKING GROUP – OPERATIONAL SUBGROUP

MEETING NOTE

Thursday 4 August 2022 (2-4pm AEST)

Chair: Neil Gibbs

Attendees: Brian Spak (ECA), Cameron Potter (Fortescue Future Industries), Dan Mascarenhas (Alinta), David Heard (ECA), Gordon Leslie (Monash University), Jonathan Myrtle (Hydro Tasmania), Sarah Jane Derby (Origin), Tom Gibson (OnLine Power), Dave Smith (Creative Energy Consulting), Anthea Harris (ESB), Amanda Sinden (ESB), Jess Hunt (ESB), Josephine North (ESB), David Swift (ESB)

Apologies: Anthony Rossiter (Powerlink), Ben Davis (ESB), Emma Fagan (Tesla), Manas Choudhury (Edify Energy), Arista Kontos (ESB)

Time	Topic	Key points/action items
2:00	Welcome, objectives & agenda	Meeting objectives: <ul style="list-style-type: none">• Shared understanding of key issues/implications of model options raised by the ESB• To facilitate feedback from TWG members on their acknowledgement/perspectives of the issues
2:05	Design choices for the CRM vs CMM (including group discussion)	Presentation and discussion structure: <ul style="list-style-type: none">• Fundamentals• CRM co-optimisation• Access dispatch• Bidding incentives Refer to detail of key points and actions below this table.
3:55	Next steps	
4:00	Meeting close	



Design choices for the CRM vs CMM – key points and actions

The notes below accompany the presentation slides shared with the TWG. Questions raised by the TWG during the workshop have been integrated with these notes for ease of review.

Fundamentals (slides 3-5)

- Although algebraically identical, the CMM and CRM have different architectures to arrive at the dispatch outcomes.
- The CMM and CRM (and other congestion models) use the same set of mathematical expressions. The ESB has proposed terminology which is consistent across the models.
- The ESB refers to the energy market as ‘access dispatch’ and the congestion relief market as ‘physical’ dispatch. This does not change the CEC’s approach but it standardises terminology to clarify the comparisons between the CMM and CRM.
- The fundamentals capture key messages from the previous TWG operational meeting (21 July 2022).

CRM co-optimisation (slides 6-8)

TWG Q: Is the proposed co-optimisation of the energy market and CRM (access and physical dispatch) a good or bad thing?

- In the current market, NEMDE involves a cooptimisation e.g. energy and FCAS. Some generators cannot provide both services at the same time or have limits on their offers. The cooptimisation allows NEMDE to find cost savings (efficiency gains) between the markets.
- In the modified CRM, there is a proposed co-optimisation between the energy and CRM markets (re-termed as access and physical dispatch). *Note: the ESB has subsequently confirmed with the Clean Energy Council (CEC) that the driver for this co-optimisation was to overcome the issue with energy imbalance in the original design, which would have inhibited NEMDE from solving.*
- However, the ESB’s underlying principle for the congestion models is that access allocation is separated from physical dispatch. This encourages cost based bidding for physical dispatch in order for NEMDE to find the least cost solution. If access dispatch is linked to physical dispatch, it will encourage distorted bids (parties would change their physical bids to secure more ‘access’).
- Note that the CMM has some indirect linkages between physical dispatch and access allocation, but no direct linkages.
- The ESB proposes that two sequential dispatches would achieve the objectives, without needing co-optimisation.

Response: At a high level, the TWG agreed that the energy and CRM markets should not be co-optimised to avoid disorderly bidding behaviours. But the TWG would further consider the ramifications of this design choice (out of session).

Access dispatch (slides 9-10)

TWG Q: What were the implicit objectives of the CRM assumed by its designers?

- There appear to be three objectives (in addition to the ESB’s objectives for transmission access reform) which led to the CRM design. These include:



- Revenue adequacy
- Status quo i.e. the energy market (access dispatch) is structured like the status quo, which is familiar to participants and has expected financial outcomes for generators based on current bidding behaviour
- LMP opt out i.e. generators can avoid LMP exposure
- *Refer to slide 10.* The ESB has created a provisional mapping of the CRM design elements to the CRM objectives.
 - A bid-based 'access dispatch' may have been introduced into CRM in order to achieve the 'status quo' objective. However, there is a question as to whether this is required. For example, an auto-bidder could replicate a generator's strategy of bidding to the market price floor if it is constrained. This would be easier for the generator to avoid two sets of bids.
 - Transmission constraints ensure revenue adequacy; so long as the dispatch is feasible, there will be revenue adequacy. This is similar to FTRs (financial transmission rights) where constraints are applied to the auction designs to ensure dispatch is feasible.
 - Generator constraints are not factored into the CMM design, but it allows for the opt-out in the CRM.
 - Other constraints relate primarily to FCAS. The CRM design proposed to co-optimize the energy market, ancillary markets and CRM. But there is no clear rationale to incorporate FCAS into the CRM optimisation. If FCAS constraints were ignored from access dispatch, it could simplify the implementation into NEMDE (and reduce implementation costs).

TWG Q: how equivalent are the design objectives for the CMM?

- Revenue adequacy: The CMM and CRM share this objective.
- Status quo: The CMM potentially shares this implicit objective.
 - The CMM does not affect the current energy market (access dispatch) and hence retains the systems of status quo and the bidding requirements.
 - The CMM instead affects the settlement systems and the bidding strategies of generators based on exposure to the LMP.
 - The net financial outcomes vary to status quo depending on the rebate allocation method e.g. pro-rata would be different to the status quo, WTA could be more similar to status quo.
- Opt out: The CMM does not share this objective.

TWG Q: how would loads work in this model?

- Scheduled load would bid into the dispatch.
- The term 'generator constraints' could be expanded to include load constraints.
- **Action: ESB to develop considerations for load.**



Bidding incentives (slides 11-15)

TWG Q: is there sufficient incentive to participate in the CRM? Will disorderly bidding (and inefficient outcomes) persist in the CRM design?

- There are profit-maximising incentives for generators to participate in the CRM. It is rational for those generators to bid at cost where they are exposed to LMP at the margin.
- Different incentives apply in the access dispatch (which do not incur physical costs of generation). There may be profit maximising incentives to increase disorderly bidding.
- Out of merit (OOM) generators may be granted access. This is an issue raised in both the CRM and CMM.
 - In the CMM, the allocation of rebates is an administrative process. Rebates could be allocated to all parties behind a constraint, irrespective if they are in merit or OOM. But the eligibility criteria could be adjusted to exclude OOM access.
 - In the CRM, alternative designs would be needed to avoid OOM generators being granted access. Some of the TWG members did not support regulation of bids.
- There is basis risk associated with the introduction of LMPs. There are questions as to how this risk will be shared between buyer/seller and how PPAs might evolve to reflect the new market signals.
 - For example, the contract cost (e.g. where $LMP < \text{strike price} < RRP$) might need to be factored into the cost-reflective bids of the CRM. The contract cost is currently hidden in the current market because all parties are settled at RRP and there is no difference between access and physical dispatch.
 - PPAs are trending towards shorter terms 3-10 years rather than legacy PPAs with 10-15 year tenors.
- **Action: ESB to explore bidding strategies for large energy users and generators with contract arrangements e.g. PPAs, LTESAs, and the implications of the model options at a total system level, and at the individual generator level.**
- **Action: ESB to facilitate further discussion with the TWG on the treatment of OOM generators.**

TWG Q: how certain is access in the congestion models?

- CMM does not involve participants bidding for access. The uncertainty of CMM access relates to the choice of the rebate allocation method.
- CRM involves bidding, which is subject to the uncertainties of generator bidding strategies. It is likely the access dispatch (in a model design with CRM) will be different to status quo because the incentives have changed. In access dispatch, everyone participates and bids to maximise dispatch. At face value, it appears that the CRM is a voluntary opt in, but with the changed incentives, generators will not receive the status quo if they opt out.